

**FAIRCHILD DISTRIBUTION AMPLIFIER**

**MODEL DA415/8**

**1BDA415/8-171**

**INSTRUCTION MANUAL**

## FAIRCHILD DA415/8 DISTRIBUTION AMPLIFIER

### GENERAL

The MODEL DA415/8 Distribution Amplifier is designed to provide a means of sending signals from one or more sources into 8 separate lines with minimum amount of interaction between channels, minimum distortion of the distributed signal and flat frequency response.

The DA415-8 consists of 8 separate isolation amplifiers. Input and output of each amplifier is accessible individually through a 24 pin blue ribbon connector in the back of the chassis. This provides for a variety of interconnections that can be made with the 8 isolation amplifiers. High input impedance of each amplifier allows connection to high impedance sources.

A self-contained power supply (692PS.24) excludes the use of any audio transformers inside the amplifier enclosure since hum fields emanating from the power transformers could be picked up by the best shielded audio transformers. The DA415/8 output circuits are designed to be used with reactive loads driving conventional 600 ohm lines.

Maximum output handling capability of each amplifier is designed to match the performance of the transformers normally used in transmission lines, as well as power limitations of telephone lines.

Unity voltage gain of the DA415/8 enables direct connections of the input to high level sources such as console outputs, outputs of tape machines, mixers or telephone lines.

Circuit of the amplifiers in the DA415/8 is a Class A emitter follower. Input impedance at the first stage is 100K ohms. The output stage has very low output impedance designed to work into resistive or inductive load. This output impedance is important when feeding telephone lines through a transformer so that, in effect, the telco line impedance is bridging the output of the DA415/8 and chances of interaction of two transformers is eliminated through a high damping factor offered by the amplifier output. This eliminates the need for an isolation pad normally used with amplifiers having a low damping effect (matching output impedance).

The power supply driving the DA415/8 is packaged on a separate plug-in card, capable of delivering the needed power to drive all 8 amplifiers. Its active filter and voltage regulator circuits feature overload and short circuit protection as well as very low ripple voltage, important for good signal-to-noise ratio.

The DA415/8 circuits are packaged into a space 3" wide by 5 1/4" high and 10" deep. The amplifier circuits are assembled on two plug-in cards with 4 amplifiers on each card. Since expected reliability of the circuits is very high, access to these plug-in cards was not designed for instantaneous card replacement, but rather through the removal of the chassis cover.

Connections of the amplifiers are made through a blue ribbon connector in the back of the chassis. Inputs may be strapped for 1x8 distribution, or used individually. The front of the DA415/8 includes a gain control to be used in the case of common input to all amplifiers.

#### CONNECTIONS

See schematic diagrams provided.

#### ATTACHMENTS

Schematic diagram DA415/8 097158

Amplifier card schematic B96661

Power Supply card schematic B96857

#### SPECIFICATIONS

GAIN	Unity
RESPONSE	+1 db from 20 to 20kHz
DISTORTION	Less than 0.3%
NOISE	85db below +4 dbm level
NUMBER OF AMPLIFIERS	8
INPUT IMPEDANCE	100K each amplifier
MINIMUM INPUT IMPEDANCE	12K ohms
(all amplifiers inputs paral- lelled)	
OUTPUT IMPEDANCE	10 ohms
RECOMMENDED LOAD IMPEDANCE	600 ohms or higher - re- sistive or reactive
POWER CONSUMPTION	5 watts
MAX. OUTPUT HANDLING CAPABILITY	+15 dbm
DIMENSIONS	3 1/2"x5 1/4"x10"D
WEIGHT	4 lbs

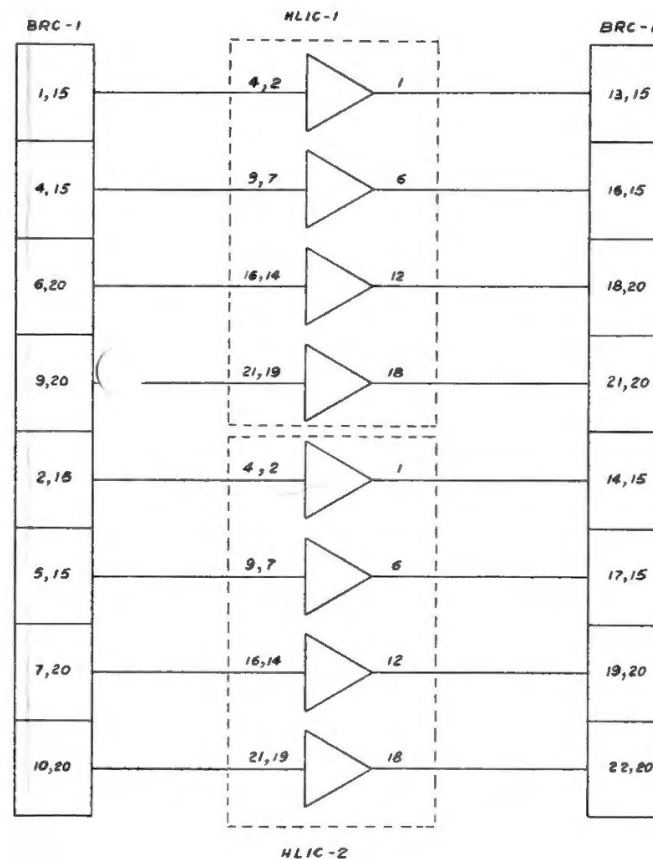
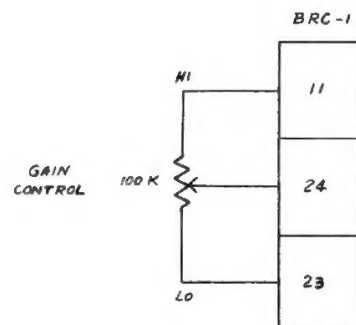
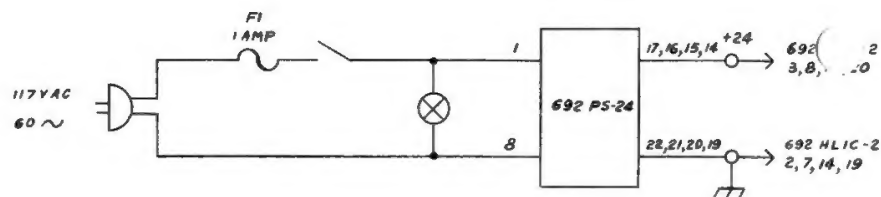
#### WARRANTY POLICY

See standard warranty policy attached to and forming part of this manual. To validate warranty, complete and return the warranty registration card included. If there is any question on this or any other FAIRCHILD professional product, please do not hesitate to contact the factory.

DO NOT SCALE DWG. WORK TO FIGURES.  
TOLERANCES - UNLESS OTHERWISE SPECIFIED  
DEC. DIMS.  $\frac{1}{16}$  IN. PRAC. DIMS.  $\frac{1}{32}$  IN. ANGULAR DIMS.  $\frac{1}{2}$  IN.  
DRILL, PUNCH, COMMERCIAL STOCK  
SIZES AND MANUFACTURERS'  
TOLERANCES ARE NOT INCLUDED.  
REMOVE ALL  
BURRS AND  
SHARP EDGES

NUMBER  
**C-97158**

ISSUE:



FOR  
DA 415-8

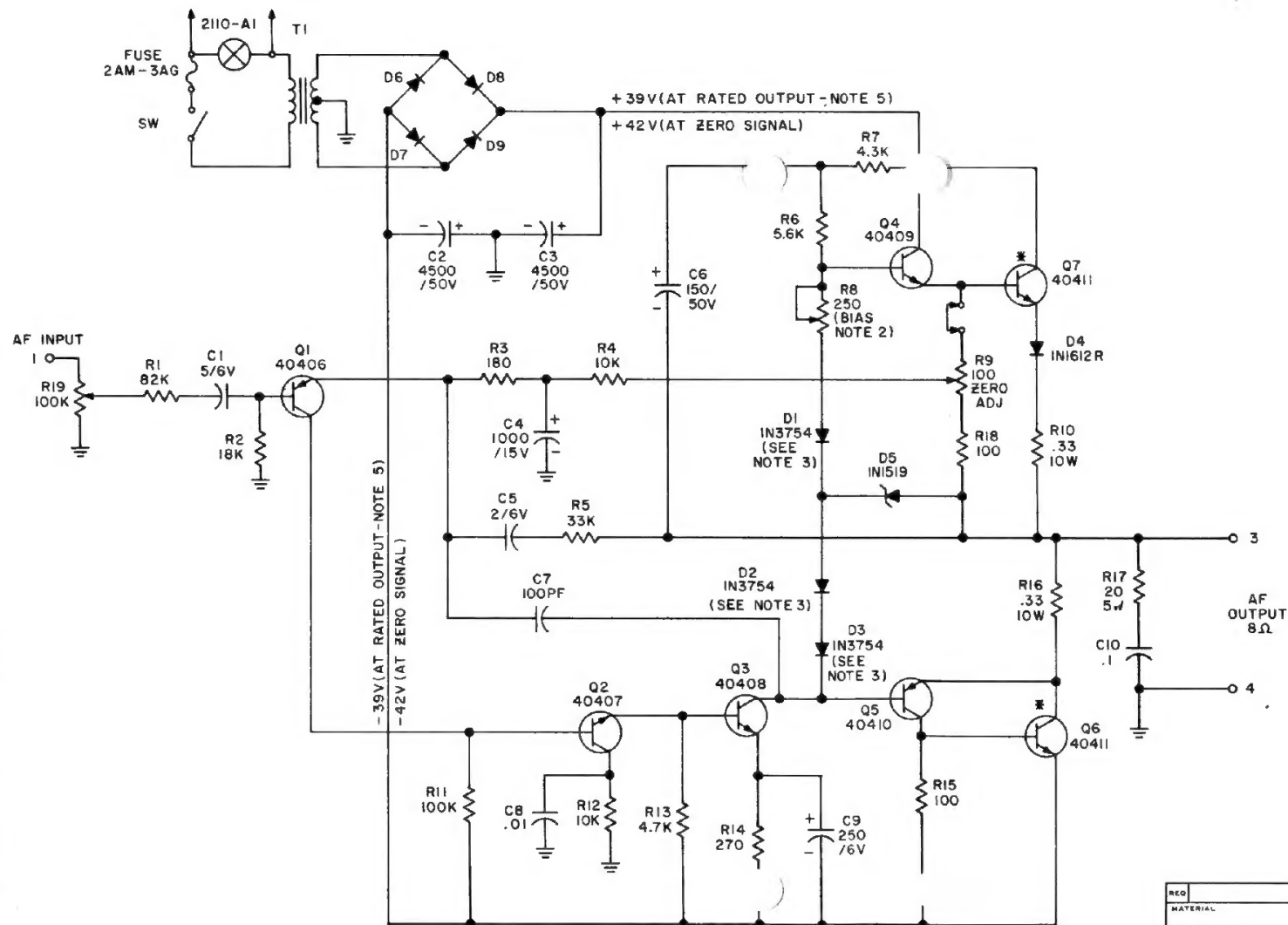
REQ	DESCRIPTION	DWG NUMBER	ITER	NEXT ASSEMBLY
MATERIAL	NAME	<b>SCHEMATIC DIAGRAM DISTRIBUTION AMPLIFIER</b> FAIRCHILD RECORDING EQUIPMENT CORPORATION 10-40 45 AVE., L.I.C. 1, N.Y.		
WEAT TREATMENT				
FINISH				
DESIGNED BY <i>[Signature]</i>	CHECKED BY <i>[Signature]</i>	DATE 12/7/70	SCALE	NUMBER <b>C-97158</b>
PROJECT ENG	ENG APP			

NOTES:

1. UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS ARE IN OHMS & 1/2W.  
ALL CAPACITORS ARE IN MFD.
2. SET BIAS FOR 20 MA QUIESCENT CURRENT.
3. THERMALLY CONNECTED TO HEAT SINK FOR OUTPUT TRANSISTOR.
4. D6,D7,D8 & D9 REPLACED BY VARO RECTIFIER NO. 247.
5. FULL LOAD AT 1.5ADC.
- \*. HEAT SINK.

C-96668

ISSUE:  
1. 4/24/69



REQ	DESCRIPTION	DWG NUMBER	ITER	NEXT ASSEMBLY
MATERIAL	NAME	70W AMPLIFIER (870)		
HEAT TREATMENT		SCHEMATIC DIAGRAM		
FINISH		FAIRCHILD RECORDING EQUIPMENT CORPORATION		
DESIGNED BY	CHAS BY	DRFTG APP	SCALE	NUMBER
CHKD BY	PROJECT ENG	ENG APP		C-96668

# INTEGRA II PC BOARD MOUNTING DIMENSIONS

AUDIO SWITCHER CARD USED AS AN  
EXAMPLE FOR LENGTH & WIDTH. ALL  
692 CARDS ARE IDENTICAL IN THESE DIMENSIONS.

